Electronic Version
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# Claims

[c1] 1. A welding-type system comprising:
a welding-type component configured to present an electrode to a weld; and
a cooling system configured to automatically circulate coolant through at least the welding-type component upon activation of the welding-type component.

[c2] 2. The welding-type system of claim 1 further comprising a control circuit adapted to electronically communicate with a power source and the welding-type component to affect circulation of coolant through the at least the welding-type component and automatically activate the cooling system when the welding-type component is activated and maintain coolant circulation if a temperature of the coolant exceeds a first set point temperature.

[c3] 3. The welding-type system of claim 1 wherein the cooling system is further configured to circulate coolant through the welding-type component for a set period of time after deactivation of the welding-type component.

[c4] 4. The welding-type system of claim 3 wherein the cooling system is further configured to automatically termi-

nate circulation when the set period of time expires or temperature of coolant is below a second set point temperature.

[c5] 5. The welding-type system of claim 1 wherein the welding component includes a welding torch having an elongated tubular handle designed to receive a water hose for circulation of water therein.

[c6] 6. The welding-type system of claim 5 wherein the welding torch further includes a jacket radially spaced from the tubular handle, the jacket configured to facilitate ingress and egress of water in thermal proximity to the tubular handle so as to absorb and dissipate heat thermally translated to the coolant from the tubular handle.

[c7] 7. The welding-type system of claim 1 wherein the cooling system further comprises a coolant tank, a pump, a motor assembly, a heat exchanger, and a fan operationally connected to one another to circulate coolant to the welding-type component automatically upon activation and during activation of the welding-type component.

[c8] 8. The welding-type system of claim 7 wherein the heat exchanger includes a coiled radiator.

[c9] 9. The welding-type system of claim 1 wherein the

power source and the cooling system are disposed within a common enclosure.

[c10] 10. The welding-type system of claim 1 wherein the activation includes a welding arc being struck between the electrode and a workpiece.

[c11] 11. The welding-type system of claim 1 wherein the cooling system includes a pressure sensor to provide feedback as to coolant pressure through the welding-type component.

[c12] 12. A welding apparatus comprising:
an enclosure having a power source and a cooling system disposed therein;
a welding torch connected to the power source and the cooling system; and
a controller configured to regulate the cooling system such that upon activation of the welding torch coolant is automatically caused to at least flow through the welding torch and continue to circulate after deactivation of the welding torch until a temperature of the coolant falls below a predetermined value.

[c13] 13. The welding apparatus of claim 12 wherein the controller is further configured to transmit a circulation commencement signal to the integrated cooling system

when a valid arc signal is detected.

[c14] 14. The welding apparatus of claim 12 wherein the controller is further configured to transmit a circulation commencement signal to the cooling system automatically upon manual start-up of the power source.

[c15] 15. The welding apparatus of claim 12 wherein the controller is further configured to repeatedly detect a coolant temperature signal and if coolant temperature exceeds a threshold, transmit a circulation maintenance signal to the cooling system independent of welding torch activation status.

[c16] 16. The welding apparatus of claim 12 wherein the controller is further configured to maintain coolant circulation until expiration of a time period following deactivation of the welding torch.

[c17] 17. The welding apparatus of claim 12 further configured for TIG welding.

[c18] 18. A method for cooling a welding-type component, the method comprising the steps of:
detecting activation of a welding-type component;
upon activation, automatically circulating coolant through the welding-type component; and
maintaining coolant circulation through the welding-type

component for a limited period when the welding-type component is deactivated.

[c19] 19. The method of claim 18 further comprising the step of maintaining coolant circulation until expiration of a specified time period following deactivation of the welding type component.

[c20] 20. The method of claim 18 further comprising the step of maintaining coolant circulation until a temperature of the welding-type component falls below a prescribed temperature.

[c21] 21. The method of claim 18 further comprising the step of maintaining a substantially constant pressure of the coolant circulating through the welding-type component.

[c22] 22. The method of claim 18 further comprising the step of maintaining coolant circulation until a temperature of the coolant circulating with in the welding-type component falls below a prescribed temperature.

[c23] 23. A welding-type apparatus comprising:
means for providing welding-type power;
means for outputting welding-type power to an output area;
means for detecting activation of the means for the out-

putting welding-type power; and
means for automatically circulating coolant through at least the means for providing welding-type power upon activation of the means for outputting welding-type power and maintaining coolant circulation until coolant temperature falls below a certain set point.

[c24] 24. A welder comprising:
a welding torch configured to present an electrode to a weld;
an enclosure defined by a base plate, a pair of side plates, a pair of end plates, and a top cover;
a power conditioner disposed within the enclosure and configured to condition raw power into a form usable in a welding process; and
a cooling system disposed within the enclosure and designed to circulate coolant through the welding torch connected to the enclosure.

[c25] 25. The welder of claim 24 wherein the cooling system is further configured to automatically commence coolant circulation through the torch when the electrode is presented to the weld.

[c26] 26. The welder of claim 25 wherein the cooling system is further configured to maintain coolant flow though the welding torch until a temperature of the welding torch

falls below a temperature set point.

[c27] 27. The welder of claim 25 wherein the cooling system is further configured to maintain coolant flow through the welding torch until expiration of a time period following removal of the electrode from the weld.

[c28] 28. The welder of claim 24 further comprising at least one coolant hose connecting the cooling system and the welding torch.

[c29] 29. The welder of claim 24 further comprising a controller configured to control the cooling system and the power conditioner.

[c30] 30. The welder of claim 24 wherein the cooling system includes a heat exchanger, a water pump, and a coolant tank.

[c31] 31. The welder of claim 30 wherein the cooling system further includes a check valve biased to prevent coolant flow when the welder torch is disconnected from the enclosure.

[c32] 32. The welder of claim 24 wherein the cooling system further includes a coolant level indicator mounted to one of the end plates or one of the side plates.

[c33] 33. The welder of claim 24 wherein the cooling system

further includes a coolant tank and a spout extending exteriorly of the enclosure, and a coolant passage connecting the spout and the tank.